

Decimal Addition

Jen Kershaw, M.ed

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AUTHOR

Jen Kershaw, M.ed

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CONCEPT

1

Decimal Addition

Here you'll learn how to add decimals.



When Julie arrived for her shift at the ice cream stand, she was surprised to find out that the cash register was broken. “You can just figure out each total and the customer’s change,” Mr. Harris said to Julie with a smile. Julie grimaced as she got out a pad of paper and pencil. She knew that she was going to need to do some quick addition and subtraction to make this whole day work. Very soon her first customer arrived. This customer ordered a small cone for \$2.25 and gave Julie exact change. “Maybe this won’t be so tough after all,” Julie thought. Then her luck ended. A woman arrived and ordered a small cone with sprinkles, caramel, and an extra scoop of ice cream. Julie quickly jotted the following numbers down on a piece of paper.

2.25	.10
.30	.85

While Julie was working to figure out the sum, let’s take a few minutes to learn how to add decimals.

Guidance

In the last two Concepts you learned how to estimate the sums and differences of problems with decimals. Remember, an estimate only works when we don’t need an exact answer.

Let’s think about Julie. She can’t use an estimation to solve her problem. She needs to know the exact cost of the ice cream cone. In this case, Julie can’t use estimation. She will need to know how to add decimals.

To add decimals, we are going to be working with the wholes and parts of the numbers separately.

We want to add the parts and then add the wholes.

How can we do this?

The best way to do this is to keep the parts together and keep the wholes together.

To do this, we simply line up the decimal points in each number that we are adding.

Add $3.45 + 2.37 = \underline{\hspace{2cm}}$

In this problem we have parts and wholes. Let's rewrite the problem vertically, lining up the decimal points.

$$\begin{array}{r} 3.45 \\ + 2.37 \\ \hline \end{array}$$

Next, we can add the columns vertically and bring the decimal point down into the answer of the problem.

$$\begin{array}{r} 3.45 \\ + 2.37 \\ \hline 5.82 \end{array}$$

Our answer is 5.82.

What happens when you have decimals with different numbers of digits in them?

When we have a problem like this, we still line up the decimal points, but we add zeros to help hold places where there aren't numbers. This helps us to keep our addition straight.

$$5 + 3.45 + .56 = \underline{\hspace{2cm}}$$

First, we line up the problem vertically.

Remember that the decimal point in a whole number is after the number

$$\begin{array}{r} 5.00 \\ 3.45 \\ + 0.56 \\ \hline \end{array}$$

Notice that we added in zeros to help hold places where we did not have numbers. Now each number in the problem has the same number of digits. We can add them with ease.

$$\begin{array}{r} 5.00 \\ 3.45 \\ + 0.56 \\ \hline 9.01 \end{array}$$

Our answer is 9.01.

Now it is time for you to try a few on your own. Add the following decimals.

Example A

$$4.56 + .89 + 2.31 = \underline{\hspace{2cm}}$$

Solution: 7.76

Example B

$$5.67 + .65 + .93 = \underline{\hspace{2cm}}$$

Solution: 7.25

Example C

$$88.92 + .57 + 3.12 = \underline{\hspace{2cm}}$$

Solution: 92.61

Now that you have learned how to add decimals, let's go back and help Julie with her dilemma.

First, we need to figure out the cost of the ice cream cone. Here are the numbers that Julie wrote down.

$$2.25 + .10 + .30 + .85 = \underline{\hspace{2cm}}$$

Next, we need to line up the numbers vertically.

$$\begin{array}{r} 2.25 \\ .10 \\ .30 \\ + .85 \\ \hline 3.50 \end{array}$$

The cost of the ice cream cone is \$3.50.

Vocabulary

Here are the vocabulary words found in this Concept.

Sum the answer in an addition problem

Vertically up and down

Guided Practice

Here is one for you to try on your own. Be sure to line up the digits vertically before adding.

$$4.56 + .98 + 1.024 = \underline{\hspace{2cm}}$$

Our answer is 6.564.

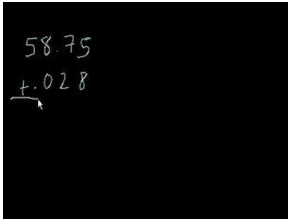
Interactive Practice

MEDIA

Click image to the left for more content.

Video Review

Here is a video for review.



MEDIA

Click image to the left for more content.

[KhanAcademy: AddingDecimals](#)

Practice

Directions: Add the following decimals.

1. $4.5 + 6.7 =$ _____
2. $3.45 + 2.1 =$ _____
3. $6.78 + 2.11 =$ _____
4. $5.56 + 3.02 =$ _____
5. $7.08 + 11.9 =$ _____
6. $1.24 + 6.5 =$ _____
7. $3.45 + .56 =$ _____
8. $87.6 + 98.76 =$ _____
9. $76.43 + 12.34 =$ _____
10. $5 + 17.21 =$ _____
11. $78 + 13.456 =$ _____
12. $.456 + .23 + .97 =$ _____
13. $1.234 + 4.5 + 6.007 =$ _____
14. $3.045 + 3.3 + 9 =$ _____
15. $23 + 4.56 + .0091 =$ _____